

WHAT IS CLAIMED IS:

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1. (correction) An internet based telephone apparatus, the apparatus comprising:

voice input/output means for inputting and outputting a user's voice and voice signal of the opposite party;

first signal converting means for converting the user's voice to a digital voice signal;

transmitting/receiving means for forming a first communication route with a telephone of a first opposite party through internet network, packeting the user's digital voice signal to send same to the telephone of the first opposite party through the first communication route and for including a voice signal from the telephone of the first opposite party received through the first communication route;

control means for controlling the transmitting/receiving means; and

second signal converting means for converting the decomposed voice digital signal to an analogue signal to output same to the voice input/output means.

2. The apparatus as defined in claim 1 further comprising a public switched telephone network (PSTN) connection means for forming a communication route with PSTN and third signal converting means for converting analogue signal including analogue voice signal from the PSTN to a digital signal, wherein the transmitting/receiving means further comprises fourth signal converting means for forming a second communication route with a telephone of a second opposite party through internet network, packeting a digital voice signal from the third signal converting means to send same to the telephone of the second opposite party through the second communication route, decomposing packet data including the voice signal from the telephone of the second opposite party received through the second communication route, and converting the

decomposed voice digital signal from the second communication route to an analogue signal to output same to the PSTN connection means through the PSTN.

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al 5 3. The apparatus as defined in claim 1 further comprising display means for displaying an established state and an operating state of telephone according to control of the control means.

4. The apparatus as defined in claim 1 further comprising storing means for storing control program of the transmitting/receiving means and the control means.

10 5. The apparatus as defined in claim 1 further comprising key input means including a number key and various function keys.

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al 15 6. The apparatus as defined in claim 1 to claim 5, wherein the voice input/output means comprises:

a handset having a transmitting/receiving function;

a speakerphone;

an external voice input/output terminal; and

communication internet detecting means for detecting a communication intention of a user according to operation state thereof.

20 7. The apparatus as defined in claim 6, wherein the control means controls the transmitting/receiving means according to a user's selection to form a communication route with an internet based telephone of the opposite party or to form a communication route with a public switched telephone network PSTN through the third and fourth signal converting means and PSTN connecting means.

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al 25 8. The apparatus as defined in claim 2, wherein the transmitting/receiving

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means simultaneously forms the first communication route and the second communication route.

9. The apparatus as defined in claim 7, wherein the user's selection is realized by a certain particular key input according to a voice guide.

5 10. The apparatus as defined in claim 7, wherein the transmitting/receiving means further comprises a tone signal generator for generating a dual tone multifrequency DTMF signal, and the control means controls the tone signal generator according to key input corresponding to a telephone number at receiving end by a user when communication is made through the PSTN.

10 11. The apparatus as defined in claim 6, wherein the PSTN connecting means further comprises a communication request detecting unit for detecting a communication request signal from the PSTN, and the transmitting/receiving means further comprises a tone signal detecting unit for detecting a DTMF signal while the control means controls the transmitting/receiving means when a  
15 communication request is detected by the communication request detecting unit to form a communication route with the PSTN and to output a voice guide for inputting a certain particular key as to whether the communication request is through the apparatus or with another telephone through the internet network via the apparatus, and to establish a general telephone communication mode and a  
20 gateway communication mode according to the certain particular key input detected by the tone signal detecting unit.

12. The apparatus as defined in claim 11, wherein the control means generates a telephone bell signal in the general telephone communication mode and controls the transmitting/receiving means according to detection result of the  
25 communication intention detecting means to form a communication route through the PSTN.

13. The apparatus as defined in claim 11, wherein the control means controls the transmitting/receiving means with a telephone number of the opposite party detected by the tone signal detecting unit in the gateway communication mode to controllably form a communication route with the telephone of the opposite party through the internet network and the PSTN which has requested a communication.

14. The apparatus as defined in claim 6, wherein the transmitting/receiving means analyzes a communication request signal received from the internet network while the control means establishes an internet based communication mode when the analyzed result by the transmitting/receiving means is a communication request with the apparatus, and establishes a gateway communication mode when the result shows a communication request with another telephone through the PSTN via the apparatus.

15. The apparatus as defined in claim 14, wherein the control means controls to generate a telephone bell signal in the internet communication mode, and controls the transmitting/receiving means according to the detected result of the communication intention detecting means to controllably form a communication route with voice input/output means and telephone of the opposite party through the internet network.

16. The apparatus as defined in claim 14, wherein the transmitting/receiving means further comprises a tone signal generating unit for generating a DTMF signal, and the control means controls the tone signal generating unit according to telephone number at receiving side included in the communication request signal in the gateway communication mode to generate a tone signal and to output same through the fourth signal converting means and PSTN connecting means.

17. The apparatus as defined in any one claim from claim 1 to claim 5 and for claim 7 to claim 16, wherein the transmitting/receiving means comprises:

an encoding unit for compressively encoding a voice signal transmitted through the internet network; and

~~a decoding unit for stretching and decoding the compressed coded voice signal received from the internet network.~~

18. The apparatus as defined in claim 6, wherein the transmitting/receiving means comprises:

an encoding unit for compressively encoding the voice signal transmitted through the internet network; and

a decoding unit for stretching and decoding the compressed coded voice signal received from the internet network.

19. An internet based telephone apparatus, the apparatus comprising:

voice input/output means for inputting and outputting a user's voice and a voice signal of the opposite party;

first communication route forming means for forming a communication route with a general telephone through PSTN; and

~~second communication route forming means for forming a communication route with an internet based telephone of the opposite party through the internet network.~~

third communication route forming means for a third communication route with the voice input/output means and the communication-requested general telephone according to communication request from the general telephone through PSTN; and

fourth communication route forming means for forming a fourth communication route with the communication-requested general telephone

according to communication request from general telephone through PSTN and internet based telephone of the opposite party through the internet network.

21. The apparatus as defined in claim 20 further comprising:

5 fifth communication route forming means for forming a fifth communication route with the voice input/output means and the communication-requested internet based telephone of the opposite party according to the communication request from the internet based telephone of the opposite party through the internet network; and

10 sixth communication route forming means for forming a sixth communication route with general telephone through PSTN and the communication-requested internet based telephone of the opposite party according to communication request from the internet based telephone of the opposite party through the internet network.

15 22. The apparatus as defined in claim 20 or claim 21 being able to form the fourth communication route in the course of forming the second communication route and being able to form the second communication route in the course of forming the fourth communication route.

20 23. The apparatus as defined in claim 21 being able to form the sixth communication route in the course of forming the second communication route and being able to form the second communication route in the course of forming the sixth communication route.

25 24. The apparatus as defined in claim 21 being able to form the fourth communication route in the course of forming the fifth communication route and being able to form the fifth communication route in the course of forming the fourth communication route.

25. The apparatus as defined in claim 21 being able to form the sixth

communication route in the course of forming the fifth communication route and being able to form the fifth communication route in the course of forming the sixth communication route.

26. The apparatus as defined in any one claim from claim 19 to claim 21, wherein the second, fourth, fifth and sixth communication route forming means comprise:

an encoding unit for compressively encoding a voice signal sent to the internet network; and

a decoding unit for stretching and decoding the compressed coded voice signal received from the internet network.

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